

## REMARKS

Reconsideration and allowance of the present application are respectfully requested.

Claims 1-20 remain pending in the application.

Applicants note with appreciation the withdrawal of many of the objections raised by the Examiner. However, in numbered paragraph 1 on page 2 of the Office Action, the title is again objected to as non-descriptive. By the foregoing amendment, a new title has been submitted such that withdrawal of this objection is requested.

In numbered paragraph 4 of the Office Action, claims 1-20 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,321,272 (Swales). This rejection is respectfully traversed, as Applicants' independent claims 1 and 14 recite features that are neither taught nor suggested by the Swales patent. On pages 4-5 of the Office Action, the Examiner has included remarks to address Applicants' previous response. Generally speaking, the Examiner asserts that "broad claim language used is interpreted on its face and based on this interpretation the claims have been rejected." Midway down page 5 of the Office Action, the Examiner asserts:

Specifically, Swales teaches applying processing capacity as 'load factors', col. 11, line 33 'by controlling the reported transmission window as seen by both participates in a connection', col. 14, lines 30-31 and rate of requests as 'the number of participates can be calculated', col. 13, lines 37-38. The capacity of the network is inherently determined by monitoring relative elements and the teachings clearly are not limited to the network itself in general. Thus, Applicant's arguments cannot be held as persuasive regarding patentability.

In the last paragraph on page 5 of the Office Action, the Examiner asserts that arguments previously set forth by Applicants' on page 15 of the last response (directed to addressing server load) are "not commensurate with what is presently claimed and therefore will not be considered at this time."

The foregoing comments of the Examiner overlook the existence of claim language which clearly distinguishes over the Swales patent, and therefore withdraw of the rejections based on the Swales patent under 35 U.S.C. §102(e) is requested.

Referring to Applicants' Figure 3, an exemplary embodiment is disclosed which includes a data server system 40 having a server application system 44 connected to external kernel 41. The kernel 41 includes an external TCP listen queue 42 that is external to the server application system 44 and that receives and stores external TCP connection requests for the data server system 40 before the requests are fetched into the server application system 44 for processing. The server application system 44 includes a network interaction module 45 connected to the server application module 46 and to the external listen queue 42. The network interaction module 45 fetches external connection requests stored in the external listen queue 42 into the network interaction module 45, thus allowing fetched requests to be screened by the server application system 44 before they are serviced.

As described in the first full paragraph on specification page 10, exemplary embodiments avoid overflow in the external listen queue 42. The fetched external requests by the network interaction module 45 can be stored in an internal queue, such as the internal queue 62 of Applicants' Figure 4. The network interaction module 45 determines which fetched requests will not be processed by the application module 46 based on the processing capacity of the application module 46 and the rate of the external requests arriving at the listen queue 42. The network interaction module 45 can thus reject those external requests which are not to be processed.

Exemplary embodiments can minimize a response time of the server application system 44 to external requests, and can minimize the number of requests dropped out of the external listen queue 42. These features are neither taught nor suggested by the Swales patent, such that the Swales patent fails to provide any teaching or suggestion of features recited in Applicants' independent claims 1 and 14.

Claim 1 encompasses the foregoing features as it recites a TCP/IP-based application system which includes, among other features, a network interaction module (such as network interaction module 45) coupled to an application module (such as application module 46) and an external queue (such as listen queue 42) to fetch external requests from the external queue into the application system, and to determine which, if any, of the fetched requests will not be processed by the application module based on the processing capacity of the application module and the rate of the external requests arriving at the external queue. Exemplary embodiments can ensure that client requests to a server will be acknowledged so that process delays due to a heavy demand on a server will not be misinterpreted as an overload of the network interconnect.

The Swales patent simply does not teach or suggest the structure and/or functionality recited in Applicants' independent claims 1 and 14. For example, the Swales patent does not teach or suggest the claim 1 combination which includes, among other features, a network interaction module coupled to an application module and an external queue (1) to fetch external requests from the external queue into the application system and (2) to determine which, if any, of the fetched requests will not be processed by the application module based on the processing capacity of the application module and the rate of the external requests arriving at the external queue. The Swales patent is not even concerned

with the capacity of an application module, such as a server application module, or the rate of external requests arriving at an external queue.

The Swales patent is directed to monitoring the capacity of a network, such as the Internet 14 of Figure 1 in the Swales patent which interconnects a client computer 8 with a server 20 of a website 4. The Swales patent describes using conventional techniques such as TCP and proxies that result in dropped connections, and in a client backing off from sending requests when requests made by the client go unacknowledged.

The Examiner's assertion on page 5 of the Office Action that "The references should not be read in a vacuum, the teachings are not mutually exclusive, and must be taken in context of what was reasonable based on the subject matter as a whole as would have been understood at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains", is confusing. The Swales patent simply does not teach or suggest the claimed combination and any attempt to interpret the Swales patent as disclosing the presently claimed features, requires the suggestion provided by Applicants' disclosure.

As described at column 4, beginning with line 8 of the Swales patent, Swales discloses that server 20 uses TCP in conjunction with IP, through TCP/IP stack 24, to interact with network interface 16 in application program 22. This portion of the Swales patent describes data transfer between the application program 22 and the user 2 through the Internet 14. The Swales patent is directed to monitoring delays due to traffic on the Internet connection, and is not concerned with the capacity of the server to respond to the requests received over the Internet. The Swales patent, therefore, fails to teach or suggest, among other features, a system having for example, a network interaction module, for

fetching external requests from an external queue into an application system, and for determining which requests will not be processed by an application module.

The Swales patent is merely concerned with maintaining real-time behavior on a network, such as the "deterministic network" of Figure 6, and this patent describes using flow control in the system to restrict traffic flow. The Swales patent does not teach or suggest situations wherein a number of requests reaching a website, such as website 4, via Internet 14 exceed the capacity of the website. This patent provides numerous examples where network loading is restricted by using known TCP and proxies (see, for example, Figure 5 and accompanying discussion in columns 10-13).

In column 12, lines 21-22, the Swales patent describes flow control by using standard TCP and proxy techniques for achieving flow control. TCP achieves flow control by dropping packets before they are acknowledged by a server. TCP forces clients to back-off sending data using, for example, an exponential back-off algorithm. This is precisely the functional behavior which Applicants' systems are directed to minimizing. That is, Applicants' disclosed systems actually determine the processing capacity of an application module and the rate of external requests arriving at an external queue to determine which requests to process, rather than allowing request to repeatedly unserviced until the client stops sending them.

The Swales patent uses terms such as "closed connections", "dropped connections" and "aborted connections" in describing the deterministic network 136 of Figure 6 and the applications on it. However, column 7, lines 11-14 of the Swales patent describe using a TCP/IP stack with the Berkley interface having signal extensions, and this is a standard socket interface that allows for packet dropping and TCP/IP back-off for flow control.

According to column 5, lines 38-44 of the Swales patent, packets are dropped if no transmit buffer is available in the TCP/IP stack.

In the Swales patent, where requests are not acknowledged in a given period of time, the client begins to slow down the time period over which it sends additional requests. In Swales, the client, and not a network interaction module which fetches external requests, is responsible for controlling the amount of traffic flow on the network, and Swales provides no teaching or suggestion to provide Applicants' claimed "fetching", and "determining" features.

As such, claim 1 is considered allowable over the Swales patent.

Similarly, claim 14 is considered allowable over the Swales patent. Claim 14 recites, among other features, "periodically fetching ..."; "determining ...", and rejecting requests not to be processed such that the possibility of dropping a request from an external queue is minimized and the response time of the application system to the requests is minimized. Exemplary embodiments are directed to avoiding, or minimizing, the dropping of packets by specifically rejecting requests not to be processed, rather than simply dropping requests as is done in the Swales system. Exemplary embodiments will close a connection for which a server is too busy to handle, rather than simply fail to respond and initiate a back-off procedure using the conventional TCP and proxy techniques described in the Swales patent. As such, claim 14 is also considered allowable.

The remaining claims depend from independent claims 1 and 14 and recite additional advantageous features which are further considered allowable. If there are

questions regarding the above, it is respectfully requested that the undersigned be contacted at the number shown below.

Respectfully submitted,

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Date: March 23, 2004

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